

REMARKS

By this Amendment, claims 1-16 are amended to merely clarify the recited subject matter and a new Abstract and title are submitted, as requested by the outstanding Office Action. Claims 1-16 are pending.

Applicants submit that the claim and specification objections and rejections under 112 are moot in view of the newly amended claims, title and abstract.

The Office Action rejected claims 1, 2, 11, 13 and 14 under 35 U.S.C. §102(b) as being anticipated by Kawabe et al. (U.S. 5,394,434; hereafter "Kawabe"). The Office Action also rejected claims 3, 4, 5, 15 and 16 under 35 U.S.C. §103(a) as being anticipated by Kawabe in view of Divsalar (U.S. 5,644,592) and rejected claims 6-10 and 12 under 35 U.S.C. §103(a) as being anticipated by Kawabe in view of Fukawa (U.S. 5,757,845). Applicants traverse these prior art rejections because no combination of the cited prior teaches or suggests all the features recited in the rejected claims.

Kawabe merely teaches demodulating the signal of each transmitting station separately. Accordingly, Kawabe utilizes interference cancellation, in which already demodulated symbols are regenerated by multiplying them again by a respective spreading code and subtracting the generated signal from the non-demodulated signals. However, no multi-user detection is performed.

Furthermore, Kawabe fails to teach or suggest obtaining a narrowband symbol-level residual signal as recited in independent claims 1, 2 and 14 and their respective claims. In fact, Kawabe merely teaches multiplication of detected signals with respective spreading codes, whereby a wideband signal is obtained. This wideband signal is then subtracted from the non-demodulated signals. Therefore, the operations taught by Kawabe are performed on the chip-level, not on the symbol-level.

Divsalar fails to remedy these deficiencies of Kawabe because Divsalar is merely directed to a method of decoding a spread spectrum composite signal including a plurality of user signals that have been spread with a plurality of respective codes. In Divsalar summed estimates of signals are subtracted from a value to provide a signal of interest. However, Divsalar fails to teach or suggest multi-user detection or the claimed operations that obtain a narrowband symbol-level residual signal.

Fukawa similarly fails to remedy these deficiencies of Kawabe and Divsalar because Fukawa is merely directed to a specific use of a plurality of matched filters for detecting a correlation between a spreading code of a desired signal and a sampled signal fed thereto.

However, there is not teaching of the claimed multi-user detection or the claimed operations that obtain a narrowband symbol-level residual signal.

Therefore, claims 1-16 are allowable of the combined teachings of Kawabe, Divsalar and Fukawa. Therefore, the rejections of claims 1-16 are traversed.

All rejections and objections have been addressed. It is respectfully submitted that the present application is now in condition for allowance, and a notice to that effect is earnestly solicited. Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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